

Remarks

Applicants request reconsideration and allowance. The office action of December 4, 2003 rejected claims 7, 8 and 15 under Section 102(e) based on the reference of Kiritani (US2002/0052102 A1) and rejected the other pending claims under Section 103(a) based on a combination of Kiritani with Hall (US 3900598). The office action also pointed out that the reference number "40" appearing on page 10 was not in the drawings. That reference number was cancelled from the specification. Claim 7 is amended to add a minimal amount of time for annealing the metal-containing material in order to provide an ohmic contact without irregularities, balls or discontinuities.

Claim 7 now provides that the annealing step take place at a temperature less than the melting temperature of the metal-containing material and that the time for annealing is at least ten hours. The inventive ranges are further defined in claim 9 where aluminum is annealed at a temperature of between 400-600 C and claims 12 and 22 where the annealing time is as long as 25 hours. Independent claim 19 has always required an annealing time of at least ten hours. Claims 13 and 23 limit the annealing temperature to 660 C.

The invention is not shown or suggested by the art of record, either alone or in combination. The Kiritani reference is typical of prior art techniques. It fails to identify the temperature and time limits of claim 7 and 19. Note that in Kiritani's paragraph [0091] the temperature is 900 C or greater. Nowhere does Kiritani mention at least ten hours of annealing time. Nor does Kiritani meet the temperature limitations.

The Hall reference fails to overcome the deficiencies of Kiritani. Hall describes a process that uses aluminum on a silicon substrate, not a silicon carbide substrate. Silicon carbide is different from silicon and process techniques that have worked in the past with silicon are not readily transferable to silicon carbide processes. See Applicants' specification, pages 1 and 2.

The Hall reference also fails to show or suggest the minimal ten hour annealing time set forth in the claims. The office action admits that Kiritani does not show the ten hour time. See page 4 of the office action. The general teaching in Hall is insufficient to show or suggest the specific invention. Hall is silent about silicon carbide.

Kiritani and the prior art show that silicon could be anneal at high temperature, but the results included discontinuities and balls. Kiritani already uses aluminum on silicon carbide and teaches high temperature and is silent on the duration. Hall is silent on the duration for aluminum on silicon. Nothing in either reference shows or suggests that annealing aluminum on silicon carbide at a low temperature will even yield an ohmic contact and nothing suggests that the minimal time for annealing is ten hours.

Neither Hall nor Kiritani have any suggestion about time limits. Indeed, one could say that Kiritani already applies Hall to silicone carbide. Kiritani teaches away from the low temperature annealing that is possible on a silicon substrate and there is no suggestion in Hall that aluminum can be annealed to silicon carbide.

In summary, the claims as amended are patentably distinguished from the art of record. Applicants request a notice of allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Thomas R. FitzGerald", with a stylized flourish at the end.

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